

(A) which contains the oviposition attractant (B), an infusion of hay in water. The smooth surface of the interior of the vessel is unsuitable for oviposition, but the strip of rough material (C') attached to plate (C) is ideal (FIG. 2). The mosquitoes readily find this rough material and move toward the water surface until they break the infrared beam of the sensor/emitter system (D). This triggers circuit (D'), which activates the motor and suction fan (F) for 1.5 seconds. The resultant reduction in air pressure in chamber (G) causes a sudden and rapid flow of air through screen (I), from the connecting tubing (E/E') and collecting tube (H). This snatches the mosquito from its oviposition site and transfers it to the collecting tube. After the time period expires, the fan stops and air turbulence caused by the fan dissipates.

As shown in FIG. 3, to remove the catch, the motor is activated by an override which enables the inlet tube (E') and its stopper to be removed while the mosquitoes are being held on the screen by suction. The collecting tube is then capped and removed.

In summary, mosquitoes are attracted to a precisely defined site—an area of rough surface with minimal air turbulence. This site is just above the water and between the infrared emitter and the sensor. The mosquitoes are then transferred by suction to a holding tube.

From the above description it becomes clear that the inventive method and apparatus provide an efficient means of collecting gravid mosquitoes. The collection method is non-subjective. Also, since air flow only starts after detection of the insect on the rough material strip, the device produces no strong air currents which might repel certain mosquitoes, such as *Aedes aegypti*, when seeking sites for oviposition.

The above detailed description of the preferred embodiments is exemplary only. Further improvements will be apparent to persons skilled in the art. For example, other forms of suction or vacuum means might be substituted for the fan and motor used to aspirate the insect from the sensing point on the rough material strip into the collecting tube. All such improvements fall within the scope of the invention which is limited only by the appended claims.

What is claimed is:

1. A trap for collecting insects, comprising:
 - a vessel containing an attractant having a surface to which insects are attracted;
 - a sensor mounted on said vessel for detecting that an insect is present at a specific point in said vessel just above the surface of said attractant;
 - a collector; and
 - transfer means, responsive to detection of an insect at said point by said sensor, for transferring the detected insect into said collector.
2. A trap for collecting insects as in claim 1, wherein said vessel comprises:
 - a container for oviposition attractant, all surfaces of said container being substantially smooth; and
 - a strip of rough material adjacent the surface of said oviposition attractant; wherein
 - said sensor is mounted on said container adjacent said strip such that the specific point is a point on said strip.
3. A trap for collecting insects as in claim 1, wherein said sensor comprises:
 - an optical transmitter; and
 - an optical detector aligned to receive light from said optical transmitter; wherein

said optical detector detects the presence of an insect at said specific point by sensing an interruption of the light from said optical transmitter.

4. A trap for collecting insects as in claim 3, wherein said optical transmitter is an infrared transmitter, and said optical detector is an infrared receiver.

5. A trap for collecting insects as in claim 1, wherein said sensor comprises an infrared sensor.

6. A trap for collecting insects as in claim 1, wherein said transfer means comprise:

- a suction tube having an inlet thereof adjacent said specific point;

- a fan producing an air flow through said suction tube to draw an insect from said specific point, through said suction tube and into said collector; and
- a motor for driving said fan.

7. A trap for collecting insects as in claim 6, further comprising:

- a trigger circuit, responsive to said sensor detecting the presence of an insect, for producing a signal to activate said motor for a prescribed period.

8. A trap for collecting insects, comprising:

- a vessel containing attractant wherein said vessel comprises:

- (i) a container for oviposition attractant, all surfaces of said container being substantially smooth, and

- (ii) a strip of rough material adjacent a surface of said oviposition attractant;

- an electronic sensor for detecting the presence of an insect at a specific point in said vessel wherein said electronic sensor is mounted on said container adjacent said strip such that the specific point is a point on said strip;

- a collector; and

- a fan controlled in response to detection of an insect at said point by said electronic sensor, for creating an air flow for a prescribed period to transfer the detected insect into said collector.

9. A trap for collecting insects as in claim 8, wherein said electronic sensor comprises an optical sensor.

10. A trap for collecting insects as in claim 9, wherein said optical sensor comprises an infrared sensor.

11. A trap for collecting insects as in claim 10, wherein said infrared sensor comprises:

- an infrared transmitter; and

- an infrared detector aligned to receive infrared radiation from said infrared transmitter; wherein

- said infrared detector detects the presence of an insect at said specific point by sensing an interruption of the infrared radiation from said infrared transmitter.

12. A trap for collecting insects as in claim 8, further comprising:

- a motor for driving said fan; and

- a trigger circuit, responsive to said sensor detecting the presence of an insect, for producing a signal to activate said motor for said prescribed period.

13. A trap for collecting insects, comprising:

- a container for attractant, all surfaces of said container being substantially smooth;

- a strip of rough material adjacent the surface of said attractant;

- a sensor, mounted on said container adjacent said strip, for detecting the presence of an insect at a specific point on said strip;

- a collector;